

Docket No.: MRE-0041

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
:
Ji Hyun HWANG and Do Hyun KIM :
:
Serial No. To be assigned :
:
Confirm. No.: Not assigned :
:
Filed: November 14, 2001 :
:
For: SURFACE MOUNTING DEVICE AND METHOD THEREOF

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

Prior to initial examination on the merits, please amend the above-identified application
as follows:

IN THE CLAIMS:

Please amend claims 4, 7-8, 14-15, 19-20 as follows:

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Amended Claims With Mark-ups to Show Changes Made

4. (Amended) The surface mounting device of claim 1 [or 2], wherein the plurality of conveyers comprise a first conveyer unit installed to be moved horizontally in a predetermined direction at a predetermined position of the base frame, for thereby carrying the printed circuit board supplied from the first transfer; and

a second conveyer unit installed to be moved horizontally in a predetermined direction at a predetermined position of the base frame, for thereby discharging the printed circuit board carried from the first conveyer unit to the second transfer.

7. (Amended) The surface mounting device of claim 5 [or 6], wherein the first and second conveyers each comprises conveyer guide frames for guiding each printed circuit board;

conveyer width adjusting rollers installed at a predetermined position of the conveyer guide frames and for guiding the conveyer guide frames when adjusting the width of the conveyer guide frames according to the width of the printed circuit board;

conveyer lifting members installed on the inside of the conveyer guide frames for mounting the parts to the printed circuit board or discharging the parts; and

first conveyer driving units installed at an inner sidewall of the first conveyer guide frames for carrying the printed circuit board.

8. (Amended) The surface mounting device of claim 5 [or 6], wherein the first and second horizontal driving units are any one among a ball screw driving device, a timing belt driving device, and a linear motor.

14. (Amended) The surface mounting device of claim 12 [or 13], wherein the first and second transfers comprise transfer guide frames for guiding the printed circuit board;

a plurality of transfer rollers installed at a predetermined interval from each other at side walls of the transfer guide frames and rotated by receiving the rotation force generated from the rotating motor for carrying the printed circuit board; and

belt members installed between the plurality of transfer rollers and driven by the rotation of the plurality of transfer rollers, for thereby carrying or loading the printed circuit board.

15. (Amended) The surface mounting device of claim 12 [or 13], wherein the first and second plane driving devices are a plane motor, respectively.

19. (Amended) The surface mounting device of claim 17 [or 18], wherein the first and second conveyers each comprises conveyer guide frames for guiding each printed circuit board;

conveyer width adjusting rollers installed at a predetermined position of the conveyer guide frames and for guiding the conveyer guide frames when adjusting the width of the conveyer guide frames according to the width of the printed circuit board;

conveyer lifting members installed on the inside of the conveyer guide frames for mounting the parts to the printed circuit board or discharging the parts; and

first conveyer driving units installed at an inner sidewall of the first conveyer guide frames for carrying the printed circuit board.

20. (Amended) The surface mounting device of claim 17 [or 18], wherein the first and second horizontal driving units are any one among a ball screw driving device, a timing belt driving device, and a linear motor.

Clean Set of Amended Claims

4. (Amended) The surface mounting device of claim 1, wherein the plurality of conveyers comprise a first conveyer unit installed to be moved horizontally in a predetermined direction at a predetermined position of the base frame, for thereby carrying the printed circuit board supplied from the first transfer; and

a second conveyer unit installed to be moved horizontally in a predetermined direction at a predetermined position of the base frame, for thereby discharging the printed circuit board carried from the first conveyer unit to the second transfer.

7. (Amended) The surface mounting device of claim 5, wherein the first and second conveyers each comprises conveyer guide frames for guiding each printed circuit board;

conveyer width adjusting rollers installed at a predetermined position of the conveyer guide frames and for guiding the conveyer guide frames when adjusting the width of the conveyer guide frames according to the width of the printed circuit board;

conveyer lifting members installed on the inside of the conveyer guide frames for mounting the parts to the printed circuit board or discharging the parts; and

first conveyer driving units installed at an inner sidewall of the first conveyer guide frames for carrying the printed circuit board.

8. (Amended) The surface mounting device of claim 5, wherein the first and second horizontal driving units are any one among a ball screw driving device, a timing belt driving device, and a linear motor.

14. (Amended) The surface mounting device of claim 12, wherein the first and second transfers comprise transfer guide frames for guiding the printed circuit board;

a plurality of transfer rollers installed at a predetermined interval from each other at side walls of the transfer guide frames and rotated by receiving the rotation force generated from the rotating motor for carrying the printed circuit board; and

belt members installed between the plurality of transfer rollers and driven by the rotation of the plurality of transfer rollers, for thereby carrying or loading the printed circuit board.

15. (Amended) The surface mounting device of claim 12, wherein the first and second plane driving devices are a plane motor, respectively.

19. (Amended) The surface mounting device of claim 17, wherein the first and second conveyers each comprises conveyer guide frames for guiding each printed circuit board;

conveyer width adjusting rollers installed at a predetermined position of the conveyer guide frames and for guiding the conveyer guide frames when adjusting the width of the conveyer guide frames according to the width of the printed circuit board;

conveyer lifting members installed on the inside of the conveyer guide frames for mounting the parts to the printed circuit board or discharging the parts; and

first conveyer driving units installed at an inner sidewall of the first conveyer guide frames for carrying the printed circuit board.

20. (Amended) The surface mounting device of claim 17, wherein the first and second horizontal driving units are any one among a ball screw driving device, a timing belt driving device, and a linear motor.

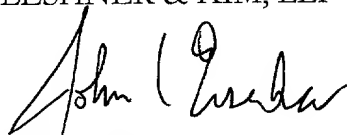
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REMARKS

Claims 1-29 are pending in this application. Claims 4, 7-8, 14-15, 19 and 20 have been amended to eliminate the multiple dependency. Prompt examination and allowance in due course are respectfully solicited.

Respectfully submitted,
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